WHAT IS CLAIMED IS:

1. A method for selectively coupling a conductive material to a contact region of a semiconductor device, comprising:

bombarding residual material coupled to the contact region with inert ions at a first position associated with an integrated cluster tool to increase the reactive surface area of the residual material;

introducing hydrogen ions at the first position for reaction with the residual material to remove the residual material from the contact region;

transferring the semiconductor device in situ from the first position to a second position associated with the integrated cluster tool; and

selectively coupling the conductive material to the contact region at the second position using chemical vapor deposition.

2. The method of Claim 1, wherein the inert ions are selected from the group consisting of:

helium ions; and

argon ions.

3. The method of Claim 1, wherein the inert ions roughen the surface of the residual material.

4. The method of Claim 1, wherein the residual material is selected from the group consisting of:

an oxide of aluminum;

an oxide of copper; and

an oxide of titanium.

5. The method of Claim 1, further comprising the step of negatively biasing the semiconductor device to attract the inert ions for bombardment of the contact region.

6. The method of Claim 1, wherein the conductive material is selected from the group consisting of:

aluminum;

copper; and

titanium.

7. The method of Claim 1, wherein the conductive material substantially fills a cavity associated with the contact region.

8. The method of Claim 1, wherein the step of bombarding and the step of introducing hydrogen ions occur at approximately the same time.

9. The method of Claim 1, wherein the semiconductor device is transferred from the first position to the second position without being exposed to the ambient.

10. A method for interconnecting a conductive layer and a contact region associated with a cavity in a semiconductor device, the method comprising:

bombarding the contact region with inert ions at a first position associated with an integrated cluster tool to increase the reactive surface area of residual material coupled to the contact region;

introducing hydrogen ions at the first position for reaction with the residual material to remove the residual material from the contact region;

transferring the semiconductor device in situ from the first position to a second position associated with the integrated cluster tool; and

coupling a conductive material to the contact region using selective chemical vapor deposition to substantially fill the cavity; and

coupling the conductive layer to the conductive material to interconnect the conductive layer and the contact region.

11. The method of Claim 10, wherein the step of coupling the conductive layer to the conductive material comprises blanket deposition of an alloy of the conductive material on the conductive material.

12. The method of Claim 10, wherein the semiconductor device is transferred from the first position to the second

position without being exposed to the ambient.

13. The method of Claim 10, wherein the inert ions roughen the surface of the residual material.

14. The method of Claim 10, wherein the conductive material is selected from the group consisting of:

aluminum;

copper; and

titanium.

15. The method of Claim 10, wherein the step of bombarding and the step of introducing hydrogen ions occur at approximately the same time.

16. An integrated cluster tool for selectively coupling a conductive material to a contact region of a semiconductor device, comprising:

a first low pressure chamber for containing the semiconductor device at a first position;

a first apparatus for directing a plasma toward the contact region at the first position, the plasma comprising inert ions and hydrogen ions, the inert ions operable to increase the reactive surface area of residual material coupled to the contact region, the hydrogen ions operable to react with the residual material to remove the residual material from the contact region;

a second low pressure chamber for containing the semiconductor device at a second position; and

a second apparatus for selectively coupling the conductive material to the contact region at the second position using chemical vapor deposition.

17. The integrated cluster tool of Claim 16, wherein the conductive material is selected from the group consisting of:

aluminum;

copper; and

titanium.

18. The integrated cluster tool of Claim 16, further comprising a voltage source associated with the first apparatus

and operable to negatively bias the semiconductor device to approximately -300V to -400V for attraction of the inert ions.

19. The integrated cluster tool of Claim 16, wherein the integrated cluster tool is operable to maintain the first chamber at a pressure of approximately 0.1 to 10 torr and to maintain the second chamber at a pressure of approximately 10^{-7} to 10^{-8} torr.

20. The integrated cluster tool of Claim 16, wherein the semiconductor device is transferred from the first position to the second position without being exposed to the ambient.